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IS 3304 (2005): Burnt magnesite-chrome refractories for general purposes [MTD 15: Refractories]



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“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
सामान्य प्रयोजनों के लिए
दग्ध मैग्नेसाइट-क्रोम की अग्निसह सामग्रियाँ — विशिष्टि
(पहला पुनरीक्षण)

Indian Standard

**BURNT MAGNESITE-CHROME REFRACTORIES FOR
GENERAL PURPOSES — SPECIFICATION**

(First Revision)

ICS 81.080

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BUREAU OF INDIAN STANDARDS
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FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Refractories Sectional Committee had been approved by the Metallurgical Engineering Division Council.

This standard was first published in 1965. In this revision, following changes have been made:

- a) Reference clause has been added;
- b) Chemical composition has been modified; and
- c) Physical requirements have been modified.

Magnesite-chrome refractories are made from a mixture of chrome ore and magnesite with predominating percentage of chrome ore.

In the preparation of this standard, the committee kept in view the quality and availability of raw materials, manufacturing and trade practices followed in the country in this field.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

BURNT MAGNESITE-CHROME REFRACTORIES FOR GENERAL PURPOSES — SPECIFICATION

(*First Revision*)

1 SCOPE

1.1 This standard covers the requirements for burnt magnesite-chrome refractories for general purposes.

1.2 It does not cover the requirements for burnt magnesite-chrome refractories to be used as roof lining in steel making furnaces, such as open-hearth furnaces.

2 REFERENCES

The standards listed below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
1387 : 1993	General requirements for the supply of metallurgical materials (<i>second revision</i>)
1528	Methods of sampling and physical tests for refractory materials:
(Part 2) : 1974	Determination of refractoriness under load (<i>first revision</i>)
(Part 3) : 1983	Determination of spalling resistance (<i>second revision</i>)
(Part 4) : 1974	Determination of cold crushing strength (<i>first revision</i>)
(Part 8) : 1974	Determination of apparent porosity (<i>first revision</i>)
(Part 20) : 1993	Determination of modulus of rupture at elevated temperature

3 SUPPLY OF MATERIAL

3.1 General requirements relating to the supply of burnt magnesite chrome refractories shall be as laid down in IS 1387.

3.2 These refractories shall be compact, of homogeneous texture and free from cracks, voids and other flaws. They shall be burnt evenly throughout and shall have sufficient mechanical strength and no broken corners.

4 SAMPLING

Representative samples shall be drawn according to the scheme of sampling given in IS 1528 (Part 7).

5 TOLERANCE ON SIZE

Variations from specified dimensions, covering both warpage and shrinkage shall be allowed to the extent of ± 1.5 percent or ± 1 mm whichever is greater.

6 CHEMICAL COMPOSITION

The material shall comply with the following requirements:

Cr_2O_3	6 percent, <i>Min</i>
MgO	75 percent, <i>Min</i>

NOTE — Till a suitable Indian Standard is published for the methods of chemical analysis of burnt magnesite-chrome refractories, the determination of chemical composition constituent specified above shall be done as agreed to between the purchaser and the manufacturer.

7 PHYSICAL TEST REQUIREMENTS

Burnt magnesite-chrome refractories shall conform to the requirements given below for physical requirements:

<i>Characteristics</i>	<i>Type I</i>	<i>Type II</i>	<i>Method of Test Ref to IS</i>
Apparent porosity, percent, <i>Max</i>	20	22	1528 (Part 8)
Refractoriness under load $t^\circ\text{C}$, <i>Min</i>	1 650	1 600	1528 (Part 2)
Spalling resistance, cycles, <i>Min</i>	20	20	1528 (Part 3)
Re-heat linear change after heating at 1 650°C for 2 h, percent, <i>Max</i> (at 1 650°C)	0.5	0.5 (at 1 600)	
Cold crushing strength, MPa, <i>Min</i>	50	50	1528 (Part 4)
MOR at 1 400°C MPa, <i>Min</i>	4	4	1528 (Part 20)

NOTE — Requirement of MOR may be decided between the purchaser and the supplier.

8 MARKING

8.1 Each refractory brick or shape shall be clearly marked with the manufacturer's name or trade-mark.

8.2 BIS Certification Marking

The material may also be marked with the Standard Mark.

8.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of India Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

Bureau of Indian Standards

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This Indian Standard has been developed from Doc : No. MTD 15 (4452).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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